

1        **What is claimed is:**

2        1. A stator comprising:

3                a bobbin having an axial winding wound therearound;  
4                plural pole plates each having a pole end, each said pole end having a  
5        pole face; and

6                an axle tube extending through the bobbin and said plural pole plates,  
7        the axle tube conducting magnetic flux created by the winding to said  
8        plural pole plates;

9                a half of said plural pole plates being mounted on top of the bobbin  
10        and another half of said plural pole plates being mounted to a bottom of  
11        the bobbin, the number of the half of said plural pole plates mounted on  
12        top of the bobbin being not less than two, the number of the half of said  
13        plural plates mounted to the bobbin being not less than two, thereby  
14        increasing magnetization, reducing magnetic flux leakage, and gaining  
15        effective guided overall magnetic flux by means of increasing an overall  
16        thickness for effectively conducting the magnetic flux to said plural pole  
17        plates.

18        2. The stator as claimed in claim 1, wherein there are two pole plates  
19        mounted to each of the top and the bottom of the bobbin to thereby form a  
20        stator having four poles.

21        3. The stator as claimed in claim 1, wherein there are three pole plates  
22        mounted to each of the top and the bottom of the bobbin to thereby form a  
23        stator having six poles.

24        4. The stator as claimed in claim 1, wherein the pole face of each of said  
25        plural pole plates extends along a plane perpendicular to a general plane of  
26        the respective pole plate.

1        5. The stator as claimed in claim 1, wherein the pole face of each of said  
2        plural pole plates includes an inclined side.

3        6. The stator as claimed in claim 1, wherein the pole face of each of said  
4        plural pole plates is a trapezoid.

5        7. A stator comprising:

6                a bobbin having an axial winding wound therearound;

7                plural pole plates each having two diametrically disposed pole ends,  
8        each said pole end having a pole face; and

9                an axle tube extending through the bobbin and said plural pole plates,  
10       the axle tube conducting magnetic flux created by the winding to said  
11       plural pole plates;

12               a half of said plural pole plates being mounted on top of the bobbin  
13       and another half of said plural pole plates being mounted to a bottom of  
14       the bobbin, the number of the half of said plural pole plates mounted on  
15       top of the bobbin being not less than two, the number of the half of said  
16       plural plates mounted to the bobbin being not less than two, thereby  
17       increasing magnetization, reducing magnetic flux leakage, and gaining  
18       effective guided overall magnetic flux by means of increasing an overall  
19       thickness for effectively conducting the magnetic flux to said plural pole  
20       plates.

21       8. The stator as claimed in claim 7, wherein there are two pole plates  
22       mounted to each of the top and the bottom of the bobbin to thereby form a  
23       stator having eight poles.

24       9. The stator as claimed in claim 7, wherein the pole face of each of said  
25       plural pole plates extends along a plane perpendicular to a general plane of  
26       the respective pole plate.

- 1 10. The stator as claimed in claim 7, wherein the pole face of each of said  
2 plural pole plates includes an inclined side.
- 3 11. The stator as claimed in claim 7, wherein the pole face of each of said  
4 plural pole plates is a trapezoid.